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ABSTRACT

One of the challenges facing Malaysia amidst its economic development is the achievement of a critical thinking society. This would enhance and guarantee the success of research and development programs in addition to having other socioeconomic effects. This paper covers the following topics: Vision 2020, Malaysia's goal to reach developed nation status by the year 2020; Malaysia's educational system; the role of the government/educational system, school libraries, teachers and schools, public libraries, parents, and schools of library and information science; methods of achieving a critical thinking society; information literacy and systematic information skills; characteristics of a critical thinker; and recommendations for the educational system, information skills program, curriculum, and research. Two appendices consist of considerations for critical thinking skills for school and classroom management, and a diagram of issues related to the implementation of the information skills program. (Contains 17 references.) (SWC)

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Towards Achieving a Critical Thinking Society in Malaysia: A Challenge to School Libraries and Educational Systems

by
Dr. Raja Abdullah Yaacob and Norma Abur Seman

The central issue in improving the quality of instruction is not a question of promoting thinking or information, but of school managers striking a balance between the two for the benefit of students. (Jack Zevin)

Introduction

One of the great challenges facing Malaysia amidst its dynamic economic development is the achievement of a critical thinking society. Critical thinking is defined by Mathew Lipman as, "A skillful, responsible thinking that facilitates good judgement because it relies upon criteria; is self-correcting; and is sensitive to context."[1] It helps promote individual growth through a number of methods, theories, ideas, programs, and techniques. Marcia Heiman and Joshua Slomianko, on the other hand defined critical thinking as, "raising questions; breaking up a complex idea into smaller components; drawing upon prior knowledge; and translating complicated ideas into examples."[2] To achieve this goal, a number of factors are involved. This would include some discussions among others, on the role of the government, educational system, parents, teacher training centers, and also school libraries. One factor that is vital is the concerted effort that has to be initiated to systematically increase the society's information skills.

Although it is noted that critical thinking could be attained by common approaches, such as the discovery approach, lateral thinking, problem-solving, cooperative learning, and reinforced by the practical experience, it is believed that librarians, via school libraries, could also complement these methodologies, given adequate services and activities. While this paper attempts to describe elements that can contribute to the learning of critical thinking, effort will also be made to identify the characteristics of a critical thinker. At the same time, with the inception of Vision 2020, it is imperative that the nation require this kind of individual in its society. The kind of society envisaged would not only help enhance and guarantee the success of research and development programs but also other socioeconomic implementations. It is not the intent of this paper to delve deeply into the critical thinking factors and mechanics because much of it has been written by educators. However, if we information specialists believe in the connection that we are part of the educational process, take advantage of the training attained, the guiding rule behind our objectives should be to play the part that could help mold individuals into a critical thinking person. There are also distinct benefits to be gained from taking advantage of the seeming benevolence of the developed nations.

Problem Statement

One of the abilities that the graduates of an educational system acquire is the ability to be critical in their thinking and in problem solving, essential for their survival in the modern society. This ability is important, not only during the educational process but also during their career. Many observations made by employers and concerned individuals have shown that the present graduates generally lack critical thinking ability. Although the educational objectives have stipulated the need for critical ability, not much has been done to make it a reality. Also, findings from various studies indicate a significant relationship between one's ability to find, utilize and interpret information and his/her ability to think critically. Numerous theoretical frameworks in education and other socio-psychological models, attempt to guide and show the ways and the background leading to the creation of critical thinking while literature indicate the strategy and training that can lead to critical thinking. However, very little has been written on the ability of an individual to become more critical through the utilization of a wide range of information. Given a situation where an individual began to gain the habit of being more critical, this condition has to be maintained, otherwise there is every possibility that he/she will relapse to the original condition. Another problem that may be worth mentioning is that, to many Malaysians, the notion of critical thinking strategies and techniques do not arise because this concept itself is not well known. It is known among the top leaders, successful

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educators, professionals, entrepreneurs and administrators of the late attempts being made to exploit to the fullest through the scope of our educational system.

Rationale

Studies indicate that critical thinking can be acquired by most individuals, given the encouragement from parents, friends, schools, and other relevant systems. Within the context of a knowledge spectrum, it has been recognized that in order for a person to be wise and apply knowledge, he/she needs information and that information needs to be imparted from the source to the recipient. This implies that although information may exist in abundance, an individual has to use it in order to take advantage of its value on one hand and to be "wise" in selecting the right information on the other hand. Moreover, information of all kinds is the source that is needed to perpetuate new knowledge and ideas.

The present information era has its characteristic of information as the heart of all activities, an era which requires critical minds to deal with problem-solving scenarios, to which information is vital. A high academic qualification is not a guarantee for critical thinking. That is why even in a situation where the number of qualified people in Malaysia is substantial, the number of potential leaders is still not in proportion.

Finally, of late the concept of critical thinking becomes the topic of great interest to both academicians, professionals, and the country's leadership. To this effect, in November, there is a scheduled international education conference and the theme is critical thinking. In fact, a day seminar on the same subject was held on June 9, 1993, given by a prominent educator, Dr. Jack Zevin. The concept of a critical thinking society suddenly has become the topical theme.

State of the Art: Present Society

Vision 2020 has made the present society realize the importance of a more critical society in order to survive the new challenges and problems of the future. However, research shows that many graduates leaving institutions of higher learning do no meet the expectation of both public and private sectors in terms of their commitment, thinking, creativity, and leadership. If the situation is true that graduates from higher institutions do not meet the expectation of both the public and private sectors in terms of their commitment, thinking, creativity, and leadership. Would it not be too much to be expected from the high school leavers? This notion is also based on a critical evaluation of the speeches made by the government leaders and those closely involved in education. For example, in one of the speeches, it was said that the present system of education emphasizes student memorization and examination and if this is allowed to continue it will only result in the acquiring of knowledge but not using that knowledge effectively. Early realization of this problem has resulted in numerous seminars and conferences all of which led to positive resolutions towards improving the situation so that students could think more critically and creatively, able to make decisions, solve problems, interpret, analyze, and develop new information and research.

Malaysia may genuinely take pride in her stable economic growth that result in a better quality of life. But highly apparent as the result of modernization is the rise of an unhealthy culture among the younger generation, that is the tendency to "waste their time." While there is evidence of an extraordinary increase of youngsters wasting their time away at supermarket, parks, and other public places, there is a clear absence of these youth visiting the libraries. This problem has in fact reached public attention and parental outcry to merit it be a national issue. Whether or not it is the outcome of modernization or a decline in moral and cultural values among the youth, it is up to the sociologists to research on this problem. In the meantime, this problem calls for a serious effort to help shape a more healthy society--a society that could think critically and this should begin with the youth because they are indeed the leaders of tomorrow.

Vision 2020

Malaysia may be considered as a third world country, but it is not by any way the intention of this nation to let this situation remain the status quo. Every conceivable effort has been made to improve the economic standing. It is fitting that the positive economic and industrial development and success has given the confidence for this country to have the visionary goal to achieve a developed nation status by the year 2020. It is also within this context that a critical thinking society is highly aspired to help with the development of all sectors of the socioeconomy, industry, and trade.

What type of society is envisaged in the year 2020? A society that is more oriented towards a scientific, progressive, developed and knowledgeable one. Because without adequate knowledge, it may not be possible for the society to reach this goal in order to successfully achieve the status of an industrialized nation. According to the Prime Minister, Datok Seri Dr. Mahathir Muhammad, in becoming a fully developed country, he envisaged that Malaysia should be "a scientific and progressive society, a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilization of the future." The people must also strive to achieve critical thinking imbued with the highest of ethical standards so that we can not only move into a highly technology-based nation but also a caring society. It is indeed through education which is related directly to human resources that we can meet these aspirations. Therefore, when we decide to invest in human capital, it is of economic necessity that we invest well to ensure rapid and sustained development.

Educational Theory

Essentially, the basic theoretical frameworks behind the acquisition of the much needed skill has something to do with the educational concept and system. In Malaysia, the educational system is seemingly moving toward hospitable and innovative changes. For example, it is agreed that in the past, the educational system and the learning process placed emphasis on dates of battles, animal classification, instead of "a sense of history" or animal life and behavior. Even the teaching technique has changed with the increasing use of modern instructional devices in some fortunate schools. What has not changed though is the information seeking skills, that is students' ability to work efficiently and to organize their work. Systematic information skills programs enable individuals to acquire skills essential or necessary to cope with the information age that we are facing now. The concept of lifelong education derived from reading enables individuals to use their intellect to the fullest extent. Calls for the need to revolutionize thinking and the transformation of culture is relevant to the future perspective which is linked to the concept of development. There is indeed a relationship between creativity and open-mindedness and the ability to be critical.

Educational System in Malaysia

The British colonial era left numerous residual issues which were only realized more than twenty years later. The environment at that time brought along an inevitable situation in which the country was left with thei limited choice of accepting the British systems and practices. What was inherent was the mere "idolization" of all that was British, even the educational system. It is not the intention of the writers to evaluate the educational system of the British, but it is important to realize that at the infancy stages of independence, there should be a sys-tem that suits the level of the development, culture, and environment of the country. The system that was relevant to the British at that time may not be relevant to Malaysia. Condi-tions vary because they reflect different historical and cultural heritages. A system that assesses students entirely on the final examination may not be an excellent measure for leadership qualities after all. That was the system that was being practiced all along until very lately when the curriculum in the schools and colleges began to be restructured along the local needs and the environmental changes. However, the objectives though excellent have not been given adequate attention and at times neglected completely. Students are exposed to facts on various subjects, but they are not taught to think over the content that is learned. They are not given the chance to search and use information themselves, which ultimately leads them to be too reliant on the teachers and discourages them from giving their own opinion.

Curriculum Approach

The *New Primary School Curriculum* better known as KBSR was introduced in 1983 with the aim of developing intellectual, affective, aesthetic, psychomotor, social, moral, and spiritual aspects of human personality. The integrated *Secondary School Curriculum* (KBSM) on the other hand, continues the same ideal with the objective of achieving a general education and the teaching and learning strategies, focussing on specific knowledge, creativity, manipulative manual skills, business skills, social sciences, computer education, and moral and religious values. According to Rita Vias, these approaches are viewed as child-centered, activity centered, and resource-based methods of teaching and learning.[3] Even the 1988 *National Education Policy* clearly highlighted the educational objective of developing newly

defined knowledge skills and also teaching life-long learning attitude.

The reformation of National Education further led to the new *National Education Act*, replacing the *National Education Act of 1961*. The new act is based on the foundation of balance and harmony in the development of potential mankind. Students are exposed to the importance of knowledge, skill, and moral values.

The two educational approaches may now have to be viewed in light of Vision 2020. The educational system would have bearings on what we are going to be in the future and this necessitates the setting up of new targets and standards of excellence, not only in science and technology, but also strategies toward achieving a critical thinking society.

Teacher, Talk and Chalk Syndrome is not new and it is still being practiced. The impact is on the students who could pass examinations but may not be able to fully utilize the knowledge or develop leadership qualities. It is realized that the educational system should be formulated so that it would have a positive effect on the society.

Three main aspects that contribute to the quality of the education system are efficiency that is necessary to sustain the impetus for growth in line with the country's changing needs; relevancy that ensures the curriculum is suited to social and economic needs of the present and future; and the pursuit of excellence that is enhancement of human skills and knowledge. In short, it would be most appropriate to quote the guiding principle of the government's philosophy on quality education as stated in the National Philosophy of Education:

> Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable, who possess high moral standards, and who are responsible and capable of achieving a high level [of] personal well-being as well as being able to contribute to the betterment of the society and nation at large.

The educational system in Malaysia is therefore, at a turning point where to do nothing would be to choose to be stagnant. The tremendous technological development has taken place in a short space of time, leading to a somewhat imbalance in the organizations and structures of staff, services, and facilities.

Changes amidst the Vision 2020 have been obvious in that the government shows great interest in its policy to "grab" every opportunity for better educational returns,no matter how and where it can be achieved. Thus, the diversification of higher education where the scholars could now be sent to countries, other than Great Britain, Australia, and New Zealand like the old days. Countries such as America, Europe, Japan, and Korea have been added to the list. Also, the growth of private colleges has been tremendous. The twinning programs with higher institutions in the West promise to provide quality education. The growing need of information professionals (IP) to support these colleges is a testimony of high expectations for graduates. It is important then for the IP to work with the vision of creating a critical thinking society. Active learning is built upon the assumption that critical thinking is, perhaps even more important than the subject content. Students who think critically about broad general principles are expected to be able to apply those principles to new and different problems.

Whose Role

The achievement of a critical thinking society depends basically on the society itself which is made up of various quarters. However, it is be-lieved that the main underlying factor goes to the educational system and the library system beginning at the school level. The components that are considered to have effect on the achievement of critical thinking have been identified as seen in Figure 1 and Table 1 respectively.

1. Government/Educational System

As stated by the education policies, the government is the vehicle, instrumental to new changes. With the inception of the numerous resolutions, it is clear that the government supports the new direction of including a thinking society and giving impetus to various parties to implement this goal. Calls by various authorities, including at the ministerial level for a concerted effort towards achieving this goal has been given nothing more than moral and material incentives.

Table 1

Roles of Various Components in Achieving the Critical Thinking Society

Components	Roles
EDUCATIONAL SYSTEMS	Identify, study and establish policy on how to achieve critical thinking person as part and parcel of the overall educational objectives.
CURRICULUM	Incorporate critical thinking approaches into the existing curriculum, using skills approach or direct method, infusion model. Train the teachers and experts in critical thinking to perpetuate the skills across the curriculum.
HEADMASTERS/ADMINISTRATORS	Aware and conscious of the importance of critical thinking program. Monitors, coordinates, evaluates for its successful implementation.
a. *School Library &* Resource Centre b. *College Library* c. *University Library*	Establish strategies and increase support for every effort to achieve thinking through: i. information resources--implement ii. services and activities--information skills strategies
PARENTS	Encourage, nurture, be exemplary, set role models, show concern and enthusiasm, and motivate the children.
TEACHERS	Teach, inculcate, promote, motivate, emphasize, assimulate concept in teaching and learning activities. Encourage activities, such as debates, lectures, talks, and project presentations.

Table 2
INFORMATION SKILL DEVELOPMENT

PROGRAMS	PRIMARY YEARS	SECONDARY YEARS	TERTIARY YEARS
Library Orientation	Basic	Mid-level	Advance
Library Instruction *(Library Services and Collection)*	Basic	Mid-level	Advance
Bibliographic Instruction *(Index,Abstracts, reviews, etc.)*	Nil	Mid-level	Advance
Information Technology Skills	Basic	Mid-level	Advance
Term Paper Clinic	Nil	Mid-level	Advance
Inculcation of Reading Skills Habits, Remedial Reading *(Problems in Reading)*	Basic	Mid-level	Advance

2. School Libraries and Resource Centers

There has been evolutionary changes in the educational philosophy and teaching/learning methods in the school curriculum. These changes are also reflected by the role of school libraries which have prompted various labels: media center, learning resource center, or school resource center replacing the conventional title of school library. Moreover, with the multi-dimensional expansion of information media that are being integrated as learning materials it has called for a transformation of the role of the school library and school librarians. Even within the Malaysian context, the term resource center is nothing new because the media resources were added to the schools in the 1970s. However, development is slow and varies from school to school and is essen-tially an urban school phenomenon. School librarians are now expected to be proactive agents of change in the learning process, amidst the change in the role of the school library. Moreover, not all schools treated the new media as an integrated part of the library, but as an additional facility.

School librarians and the media center should try to develop among students the following skills:

i. Library skills--develop various reading and writing skills as well as critical thinking so that the child is able to interact with his readings and writings.
ii. Inquiry and research skills--able to do research in the library and look for all types of information resources.
iii. Information presentation skills.

A number of research projects that have been done, including some at the Ph.D level indicate a positive relationship between academic achievement, language reading, and library skills and the quality of school library media service. A good library media service with professional staff enhances the quality of education. The school library system should be client-centered, allowing students to support the cultivation of information literacy.

3. Teachers and Schools

No matter how advanced is the *IT*, the teachers remain the vital resource in the educational system. According to Omar, "Students need warmth, encouragement, and understanding which no curriculum package can provide."[4] This has implications for the manner in which training is given at the teachers' training centers where the importance of nurturing and counselling services in addition to the cognitive input should have been emphasized to prospective teachers. Teachers should try to increase the students intellectual capability by teaching students how to learn and training them to analyze, evaluate, and think for themselves. Teachers should also use interpersonal relationships with the learners and move according to an individual pace. As Huston stated, "in a participant-centered classroom, student learners must feel encouraged to operate from their own domain of experience, rather than moving immediately into that of the educators' experience."[5] Further, the role that can be played at the school level would include:

i. helping students to understand and be aware of the importance of information in life.
ii. making students realize that knowledge and skill acquired while at school is insufficient for later years. They need to continuously acquire and utilize knowledge and skills.
iii. teaching students how to manage a large amount of information through information skill programs.
iv. applying information skills in the learning process and later in place of work and daily life.

4. Public libraries

A cross section of the public *at all levels* use the public library for leisure and educational purposes. The public library could play a significant role in shaping the thinking and attitudes of the public and be the agent for change in the following ways:

i. provides informational materials and resources on different subjects that would nurture the critical thinking process;
ii. highlights and promotes informational materials as a source of facts, ideas,and experiences which could be useful in solving problems, create new ideas, designs and products;
iii. attracts children, youth, and adults to utilize their leisure time critically in libraries for pleasure and information;
iv. makes society aware of the role of the public library as the center for education, and social and cultural activities;
v. intensifies its effort toward drawing more members from the society so that they can take advantage of the information to nourish them intellectually and spiritually

with the goal of achieving a more critical capacity and power to excel.

5. Parents

One of the greatest influential factors in cognitive and affective development of a child is the parents. Parents should rad widely and be knowledgeable in the upbringing of their children. Children need to be exposed at an early age to reading materials, rhymes, riddles, and educational games. Parents, par-ticularly in Malaysia within the present context could contribute to the development of critical thinking by:

i. encouraging the child to question at an early age to discuss matters with them. The child has to be taught to ask "why" besides what is it.
ii. exposing and involving them to the concept of problem-solving at an early age, such as how to deal with situations if the washing machine is not working.
iii introducing positive attitudes in them.
iv explaining to them to discover on their own through reading. Always reason things out with them to improve their reasoning abilities and problem solving.
v teaching the child not only to defend a position (themselves) and to analyze (itemize) but also to apply the skill of doing things (the design and creative elements).

6. School of Library and Information Science

To support the large-scale changes necessary to promote libraries and literacy, the curricula of library school should be revised. In order to realize the objectives of emerging need for critical thinking, adequately trained library personnel is indeed needed. Further, the school's added responsibility is also geared at a continuous commitment toward training work-force couldcould be a determint to the effectiveness of the resource centers. Critical issues that are emerging within the education profession will affect the development of library education and training programs needed to meet the need.

Another pertinent factor worth mentioning is the teaching of bibliographic instruction in the library schools. The library user education programs are usually taken seriously by the college and university authorities upon receiving new students. It is also high on the list of priorities in academic libraries.

6. School of Library and Information Science

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Another pertinent factor worth mentioning is the teaching of bibliographic instruction in the library schools. The library user education programs are usually taken seriously by the college and university authorities upon receiving new students. It is also high on the list of priorities in the academic library. The programs of the school of library and information studies should better equip the prospective librarians to teach and also remind them of their teaching role and the importance of user education. It is appropriate, therefore, in a time of increasing informational media and demand for information by more sophisticated users for library schools to expose students to the theoretical framework in learning such as learning theories, psychological and sociological behavior theories and be encouraged to continue their education in this area. It is recognized that knowing how knowledge/information is created, processed, stored, and retrieved alone is not enough and more emphasis should be given on how to strengthen their ability to teach people to use this knowledge successfully navigate the ever changing informational media.

How to Achieve: Methodologies

Technique of Intellectual Work

Teaching the technique of how to study and how to work is not new since the though was put forward in 1898 by a great philosopher and professor, T. G. Masaryk, in his lectures entitled "How to Work." What tools could be used to "augment his mind, amplify his mental power and help him in many aspects of his intellectual activity."[6] In other words critical

thinking can indeed be generated through intellectual activities.

Educational Years in Schools

The school should not be perceived as entirely an information seeking place. It should be instrumental in the promotion of reasoning and problem-solving skills. The two elements should be the "major objectives, presenting information and developing thinking skills, and are represented in the management of school classrooms, curriculum, and testing programs.[7] In other words, the content, goals and objectives of the schools and the time spent should not only lead to quality education but also the learning outcomes that would ensure critical thinking. Therefore, the school program should be remodeled, stressing the "higher-order cognitive concepts and strategies through critical approaches as a group, and there are many different ones, emphasize quality educational management, instruction, and learning rather than quantity."[8]

In the classroom setting, teachers as role models should be the intermediary in problem-solving and encourage students to discuss, debate among themselves, give projects and allow presentations of these projects and allow other students to ask questions. Students should be given creative exercises, such as reviews of books, articles, and films. The present "parroting" methods should be eliminated, and students should be encouraged to view things from different angles and this could be derived through different thoughts of authors. This would help in the adoption of alternative approaches to the one single answer way inherent in the Malaysian system. Questions or discussions given to students should demand logical, judgmental, or critical assessments. In helping students to learn how to learn, the role of resource centers should be emphasized, and coordination between classroom and the resource center should be encouraged. Research has been done to evaluate and measure the effectiveness of these methods, and it has been found that these methods are good in **retaining** information but not in **critically analyzing** information and knowledge. In this new environment, it is interesting to see the improvement and modifications made to suit the new need. For example the new curriculum has been known as the 3M because emphasis is given to:

	"Membaca"	(Reading)
3M.....	"Mengira"	(Mathematics)
	"Menulis"	(Writing)

What has not been emphasized is the fourth "M", that is "Maklumat" which is Information. Information must be added to the curriculum because it facilitates the learning of reading and writing.

Reading

Information.....

Writing

The main outcome of the implementation of the old and new curriculum has been unsuccessful in producing critical individuals because school leavers and graduates have not acquired or reached the critical thinking level as expected.

Seminar: A Method of Instruction

"Seminar has become an established method of instruction in many institutions of higher learning, especially in the West. Although at the beginning, it was confined to graduate students, many institutions are using seminars as a method of instruction even at freshman level (1st year). The number of students in a seminar is small, maybe five to ten. The students work in close association with the instructor. They make an in-depth study of some topics, write a paper, present it in class, and invite discussion. The seminar as a method of instruction provides an introduction to the methods of scholarly work and helps to cultivate habits of confident presentation and meaningful discussion. It promotes self-study and critical thinking. Such a method naturally depends on greater use of library materials and library research."

In short, classroom learning and teaching should be done in a manner to allow teacher-student interactions with the objective of increasing students' cognitive levels. There should be rapport between the two levels, and encouragement should always be given for students to ask and answer questions and discuss problems. Emerging patterns of eduation are increasingly emphasizing process skills, opening avenues for more active pupil involvement in learning.

Post-educational Period

Information leads to thinking and therefore reading should be continued and

pursued during the post-educational period. The information may cover different areas of interest or be related to the career. It would not be a bad idea to have home libraries and also set up libraries in the office.

Continuous Education and Training (Conference, Seminars, and Workshops)

As soon as one begins a career, he/she should undergo full fledged training. Training is an on-going process done by attending conferences and workshops. Therefore, it can be summarized that the two phases of development of information skills, one during the pre-critical thinking stage,and the other during the post-critical thinking stage that should constitute a life-long process in the individual's intellectual development.

Information Literacy: Systemic Information Skills

One's ability to think critically is influenced by his/her ability to find, utilize, and interpret information. An information literate person is able to recognize when information is needed and have the ability to locate, evaluate, and employ the needed information effectively. In other words, he has learned what to learn. The overwhelming increase in the kinds and types of information led to the globalization of every sector of life. Not all information is relevant and needed and therefore, individuals should be able to select, record, and disseminate necessary information. What is significant is the realization on the part of the Deputy General of Education, *Datuk Haji* Omar Mohd. Hashim, who highlighted that with the knowledge explosion, "...it becomes crucial, therefore to equip the students with higher cognitive skills such as critical thinking, the use of the scientific process, the ability to think abstractly and creatively and the ability to be intellectually flexible. Related to this is the need to master the skills of lifelong learning where we teach students to accustom themselves with the idea of learning throughout their working life. They must know how to gain access to information, what kind of information to select, and what to use the information for."[9] Although the above statements are nothing new to librarians, the very fact that they come from a higher authority and from a different profession has a great significance because it is in agreement with what has been preached by the library profession. With this official recognition, it is appropriate for all libraries, notably the school and college libraries to improve and speed up the information skill programs.

Now that we talk about the important methodologies of achieving critical thinking, the method that can be practically applied by school librarians in order to meet the goal is systematic information skills. Systematic information skills are nothing new in the West. In fact, in *Nation at Risk* it as clearly stipulated that a nation that lacks the tempo of reading would be tantamount to the downfall of the people's progress, and that it why it is regarded as being at risk. It is within the context of this problem statement that critical thinking has to be nurtured, continued and one of the ways is through the concerted effort of both teachers and librarians to help the individuals through a systematic information skills program.

The introduction of systematic information skills and a program of critical thinking will require the that management/authorities recognize the importance of increasing critical abilities in the short as well as the long term. With some refinements, existing methods of information skills could be improved. Implementation of a broad-based critical thinking program in classroom and libraries, however, is contingent upon the development of more sophisticated methods for adequately measuring the total output of the programs. Also, with the rapidly changing information formats, both librarians and users require on-going learning.

Table 2 illustrates some examples of information skills programs that undertaken at different levels:

i. Library Orientation
ii. Library Instruction
iii. Bibliographic Instruction
iv. Library Skills
v. Information Skills
vi. Library Information Skills Course

To ensure that the above programs are effective, it is also crucial to supplement with one-on-one instruction at all times (at the desk) as a form of reinforcement. Also, *Library and Information Skills Course* could be included as part of the requirements in college and university curriculum. Appendix 1 underlines issues related to the implementation of information skills program.

Characteristics of a Critical Thinker

The present generation has been typified by its experience with the information systems (explosion in computer hardware, software, and telecommunications systems) in much the same way that previous generations were traumatized by the experience they had in the first or second generation computers. Inadequate information (lacking information may lead to ignorance, obsolescence, bias, and prejudice) which are the traits of an uncritical person. Such traits may pose a danger to society at large rather than "an asset to society." A profile of a critical thinker would accommodate the following traits, taken partly from Zemin[10] although it may not be in anyway a complete or exhaustive list. He stated that critical thinking skills would enable individuals to:

a. distinguish between variable facts and value claims
b. differentiate between relevant and irrelevant information
c. decide the truth or accuracy of statements
d. find the missing elements of a puzzle or mystery
e. identify logical fallacies
f. identify logical inconsistencies
g. detect bias and prejudices
h. understand a belief or argument from another's point of view
i. recognize assumptions and viewpoints
j. judge the strength or weakness of a claim or argument
k. predict the probable or possible consequences of a decision or action

Appendix 1 illustrates additional skills that are desired of an individual in line with the goal of achieving a critical thinking society. The attainment of these skills should enhance individuals by providing:

a. good communications skills (including interpersonal) and people oriented
b. self confidence
c. patience and perseverance
d. logical and flexible approach to problem solving
e. memory for details
f. spelling, grammar, vocabulary
g. good organization and efficient work habits
h. good organization and efficient work habits
i. motivation for having and giving additional training
j. willingness to share knowledge with others
k. ability to select relevant information
l. curiousity and willingness to listen and to know.

Recommendations

There does seem to be a growing body of evidence supporting the idea of creating a more critical society. From the aforementioned discussions, some recommendations could be highlighted according to the following headings:

Educational System

1. The educational system complemented by systematic information skills appear most effective with students.
2. The effect of classroom support and resource centers systematic information skills could be greatly enhanced by follow-up discussions and counselling.
3. Critical thinking is important for academic and future success. Therefore, students should be encouraged to engage in the active process of thinking through discussions, and reading and writing assignments. The development of critical thinking abilities should be integrated within the four areas crucial in education and careers: reading, writing, speaking, and listening.
4. Teachers' roles should be the combination of instructors, disseminators of information and knowledge, and the facilitators of learning.
5. Students assessment should not only be directed towards the examination results but also the presentation of their learning through projects and term papers.
6. Educational approaches should emphasize higher cognitive level, like analysis, synthesis, application, and evaluation, not the lower cognitive level such as memorization, remembering, and understanding.

Information Skills Program

1. Systematic information skills program must constantly be viewed as an adjunct to other developmental relationships rather than as an alternative or independent activity
2. it should be the objective of the library policies along with that of the educational system to aspire for critical thinking patrons.

Curriculum

1. Curriculum should be structured to allow the use of information in the resource center for learning and teaching.

2. Curriculum structure should not solely emphasize textbooks but other types of information such as AV, radio and TV programs, and computer software. Students should be able to use various information-handling skills, a reflection of life-long learning skills
3. Include library and Information Skills Course as a part of the requirements in college and university curriculum.

Research

1. A great deal of research should be done, for example, the effectiveness of critical thinking programs.
2. Youth should be encouraged to involve themselves in information and intellectual activities so that they are not diverted toward unhealthy activities.
3. Although it is difficult to operationalize the concept of critical thinking some element of measurement of critical thinking should be employed.[11]

At the same time, it is crucial to note that while we are looking forward to achieving both material and intellectual development, Malaysia is basically Asian in its cultural outlook. It is very crucial then, to create a situation where "moral" values and preservation of traditional customs are not totally buried even in a critically based society. This is in view of the fact that the situation is already inherent in some ways where modernization is not balanced with moral, cultural, and religious values. Respect of the old and the religious values is indeed the core of society.

Conclusion

Malaysia is indeed going toward an evolution in its restructuring of society. This, of course, includes the educational system which subsequently affects the school library as well. The role of the school library and the idea of a media and instructional centers have long been accepted although its development varies from state to state. With the government's initiatives to achieve a developed nation status by the year 2000 it is recognized that school libraries and the educational system are instrumental to the success of this goal. It is almost appropriate that the transition toward the 21st century has led to the present situation and provides avenues for comparison with the development in Australia and other parts of the world. Systematic information skills programs enable individuals to acquire skills essential or necessary in order to cope with the information age that we are facing now. Information skills as a tool to critical thinking should not be denied to individuals, otherwise they will be handicapped in dealing with today's avalanche of information. As such it can result in individuals being information poor and information rich. The information rich is far better equipped and prepared to be critical as they have adequate reference to substantiate their decisions, point of views, ideas, statements, decisions, and policies. Finally it is not always true that critical thinking programs should always be centered around the educational years, but also during the post-educational period, meant as followups to each and individual pursuits. Therefore, it can be summarized that there are two phases of the development of the critical thinking skills, one during the pre-critical thinking stage, and the other, the post-critical thinking stage.

Notes

1 Mathew Lipman. Institute for Critical Thinking, Montclair State College: N.J., 19.

2 Marcia Heiman and Joshua Slomianko, *Critical Thinking Skills*, National Education Association 1985.

3 Rita Vias, "Educational Needs of School Resource Centre Personnel," in paper presented to the Seminar on Library and Information Science Education in Malaysia: Needs and Expectations, International Islamic University, Petaling Jay, Selangor, Malaysia, 1992: 2-3.

4 Omar Mohd. Hashim, "Toward Excellence in the 21st Century," in Free Teachers' Union (IFETU) Regional Conference for Asia and the Pacific Region, Kuala Lumpur, 5-7 November 1990.

5 M. M. Houston, "Rethinking Our Approach for Research Instruction," *Research Strategies*, 1 (4), 1983: 185-187.

6 V. Stibic, *Tools of the Minds: Techniques and Methods for Intellectual Work*, North-Holland Publishing Co., 1982.

7 Jack Zevin, "Managing Schools for Quality Learning: The Encouragement of Critical Thinking in School Classrooms," Malaysia Institute Aminuddin Baki, 1993: 1.

[8] Ibid: 2.

[9] Omar: Ibid.

[10] Ibid: 3.

[11] Perhaps we could take advantage of various measurement methods that are presently available such as the **Watson-Glaser Critical Thinking Appraisal (CTA)** and the **Chickering Critical Thinking Behaviours.**

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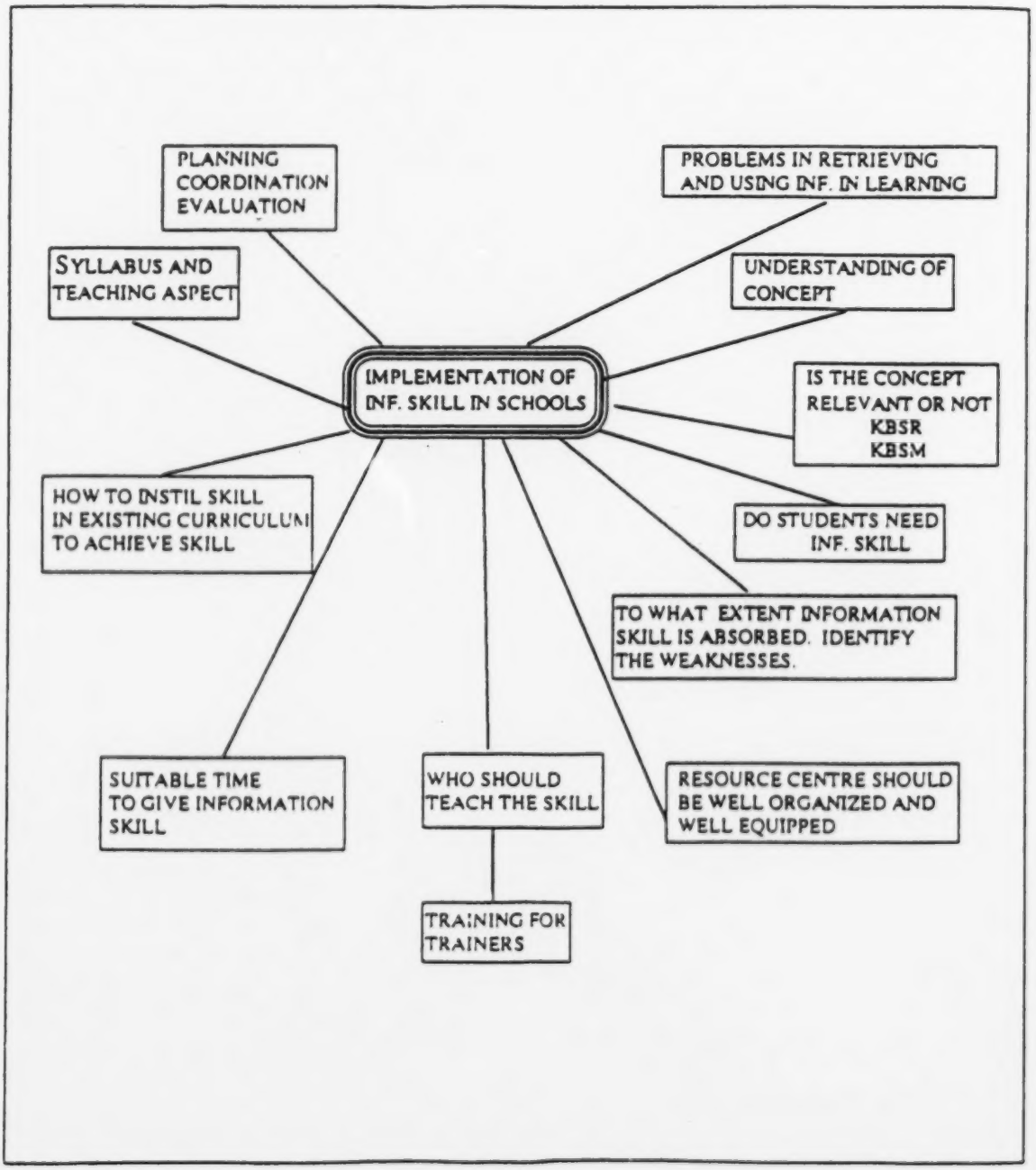
Appendix 1

According to Jack Zemin, critical thinking skills for school and classroom management should include some or all of the following:

1. keeping your mind open to a variety of opinions and positions, even those with which you may disagree.
2. comparing and contrasting alternative approaches or multiple interpretations of a problem, seeking those which transcend cultural boundaries and meanings.
3. learning to live with uncertainty and probability in formulating answers to questions or solutions to problems.
4. identifying the sources, amount, relevance, organization, and quality of evidence, deciding the relative merit of the data, from the subjective to the objective.
5. testing the plausibility and consistency of an argument or theory, working towards a decision to uphold, deny, or revise the concept.
6. carefully applying theory to practice, evidence to explanation, and ethical rules to actual behavior.
7. examining both stated and unstated assumptions in a problem or argument, and determining their impact on conclusions.
8. acquiring a sensitivity to the cultural and historical context of ideas, concepts, and traditions.
9. suspending quick judgement, or "jumping to conclusions," in favor of a neutral or empathetic viewpoint.
10. adopting the viewpoints of others as organizers for the interpretation of communications,events, and experiences.
11. developing strategies for understanding and clarifying ambiguous, or unclear findings, problems, issues, or theories.
12. appreciating the logic, skill, insight, ingenuity, and perceptiveness of both student-initiated ideas and those of experts, without necessarily accepting these as definitive for all time.
13. predicting future developments based on current observations, evidence, and accepted theories.
14. setting up standards for judgements of value across all subjects and disciplines, including art, music, literature, science, history, and mathematics, sports, etc.
15. information rules, principles, interpretations, and theories of your own invention that seek to improve on current models and concepts.

Appendix 2

ISSUES RELATED TO THE IMPLEMENATION OF INFORMATION SKILL PROGRAMME


IMPLEMENTATION OF INF. SKILL IN SCHOOLS
PLANNING COORDINATION EVALUATION
SYLLABUS AND TEACHING ASPECT
HOW TO INSTIL SKILL IN EXISTING CURRICULUM TO ACHIEVE SKILL
SUITABLE TIME TO GIVE INFORMATION SKILL
WHO SHOULD TEACH THE SKILL
TRAINING FOR TRAINERS
PROBLEMS IN RETRIEVING AND USING INF. IN LEARNING
UNDERSTANDING OF CONCEPT
IS THE CONCEPT RELEVANT OR NOT KBSR KBSM
DO STUDENTS NEED INF. SKILL
TO WHAT EXTENT INFORMATION SKILL IS ABSORBED. IDENTIFY THE WEAKNESSES.
RESOURCE CENTRE SHOULD BE WELL ORGANIZED AND WELL EQUIPPED